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EXAMINER	
PHAM, LUU T	

ART UNIT	PAPER NUMBER
2437	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/575,524	BLUMBERG ET AL.	
	Examiner	Art Unit	
	LUU PHAM	2437	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 December 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,7,10,11,14,26 and 27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,7,10,11,14,26 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the Amendment filed on 12/18/2009.

2. In the instant Amendment, claims 26-27 have been added; claims 3, 5-6, 8-9, 12-13, and 15-25 were cancelled; claims 1-2, 4, 7, 10-11, and 14 have been amended; and claims 1, 7, 10, 11, and 14 are independent claims. Claims 1-2, 4, 7, 10-11, 14, and 26-27 have been examined and are pending. **This Action is made FINAL**.

Response to Arguments

3. The objection to the specification is withdrawn as the specification has been amended.

4. The objections to claims 2-25 are withdrawn as the claims have been amended/cancelled.

5. The rejections of claims 7-9 and 17 under 35 U.S.C. § 101 as failing to point out which statutory class the claimed subject matter belongs to are withdrawn as the claims have been amended/cancelled. However, a new ground of rejections of 35 U.S.C. § 101 is invoked for amended claim 7 and newly added claims 26-27 because the claims are directed to non-statutory subject matter *(See sections 10-11 below for more details)*.

6. The rejections of claims 11 and 14 under 35 U.S.C. § 101 are maintained because the claims are directed to non-statutory subject matter *(See sections 10-11 below for more details)*.

7. The rejection of claims 1-6 and 18-19 under 35 U.S.C. 112, second paragraph, are withdrawn as the claims have been amended/cancelled.

8. Applicants' arguments in the instant Amendment, filed on 12/18/2009, have been fully considered but they are not persuasive.

Applicants' arguments:

a. Ginter fails to disclose *"finding a signature of a unit authorized for activating the machine tool."*

The Examiner disagrees for the following reasons:

a. Ginter does disclose finding a signature of a unit authorized for activating the machine tool *(pars. 1910, 1919, and 1958; upon initialization, the operational materials 3472 validate the embedded signature value against the actual electronic appliance 600 signature SIG, and may refuse to start if the comparison fails)*.

9. Applicants' arguments with respect to claims 1, 7, 10-11, and 14 have been considered but are moot in view of the new ground(s) of rejection.

Claim Objections

10. **Claims 7 and 14 are objected to** because the following informalities:

- **Regarding claim 7**; claim 7 recites the limitation "a sender" in lines 11 and 18. Article "a" should be corrected as "the." (i.e., "the sender").

Appropriate corrections as required.

Claim Rejections - 35 USC § 101

11. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

12. **Claims 7, 11, 14, and 26-27 are rejected under 35 U.S.C. 101** because the claim may be directed to non-statutory subject matter.

- **Regarding claim 7**; the claim invention is not directed to eligible subject matter under 35 U.S.C. § 101 in view of ***In Re Bilski,*** 88 USPQ2d 1385. While the claims recite a series of steps or acts to be performed, a statutory "process" under 35 U.S.C. 101 must (1) be tied to particular machine, or (2) transform underlying subject matter (such as an article or material) to a different state or thing (See ***In Re Bilski,*** 88 USPQ2d 1385; see also ***Diamond v. Diehr***, 450 U.S. 175, 184 (1981); ***Parker v. Flook***, 473 U.S. 584, 588 n.9 (1978); ***Gottschalk v. Benson,*** 409 U.S. 63, 70 (1972); ***Cochrane v. Deener,*** 94 U.S. 780, 787-88 (1976)); The instant claims are neither positively tied to a particular machine that accomplishes the claimed method steps nor transform underlying subject matter. The method claimed including steps of *"assigning a private encryption key," "encoding the machine control parameters," "providing encoded machine control parameters," "decoding the encoded machine control parameters," and "authenticating a sender"* is broad enough that the claim could be completely performed mentally, verbally or without a machine nor is any transformation apparent; Therefore, the claimed invention is directed to non-statutory subject matter. The mere recitation of the machine in the preamble with an

absence of a machine in the body of the claim fails to make the claim statutory under 35 USC 101.

- **Regarding claims 11 and 14**; claims 11 and 14 recite the limitation *"computer readable medium;"* In light of the specification, paragraphs [0011] and [0023], the aforementioned *"computer readable medium"* includes "data carrier," and "electronic carrier signal," which are non-statutory subject matter. Therefore, the claims are directed to non-statutory subject matter.

- **Regarding claims 26-27**; claims 26-27 are also rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter for the same reasons as addressed in claim 1 above.

Claim Rejections - 35 USC § 112

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. **Claims 7 and 26-27 are rejected under 35 U.S.C. 112, second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- **Regarding claim 7**; claim 7 recites the limitation *"second encoding the provided machine control parameters."* This is unclear as to whether the encoded machine control parameters (the output of first encoding step) are encrypted or the machine control

parameters provided to activate the machine tool are encrypted. For the purpose of applying art, the Examiner interprets the aforementioned limitation to mean *"second encoding the first encoded machine control parameter..."* (emphasis added).

- **Regarding claims 26-27**; claims 26-27 are dependent on claim 7, and are therefore inherit 35 U.S.C. 112, second paragraph issues of the dependent claim.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

16. **Claims 1-2, 4, and 14 are rejected under 35 U.S.C. 102(e)** as being anticipated by Ginter et al., (hereinafter "Ginter"), U.S. Patent Application Publication No. 2003/0163431, filed on September 10, 2001.

- **Regarding claim 1**, Ginter discloses a machine tool protected against improper activation *(pars. 0439, 0502, 0699, 2535-2541; Figs. 7-9 and 11; SPUs 500 may be used to perform all secure processing for VDE 100)*, comprising:

an open-loop or closed-loop control device for the activation of machine functions *(pars. 0488-0495; Figs. 7-9 and 11; 'right operating system' 602, including SPU*

500, VDE 604, and other operating system function 606, is used to control electronic appliance 600; the appliance 600 may be numerically controlled machines including machine tools and the like);

a reading module for reading in machine control parameters for the open-loop or closed-loop control device from a data carrier or electronic carrier signal *(pars. 0495-0489; 0560-0565; Figs. 7-9 and 11; a VDE control program may be, at least in part, loaded into the memory and communicated to and decrypted within SPU 500 prior to execution)*; and

an improper-activation safety module *(pars. 0439, 0502, 0699, 2535-2541; Figs. 7-9 and 11; SPUs 500 may be used to perform all secure processing for VDE 100)*, which decodes the machine control parameters that are intended for the machine tool and are encoded using an asymmetric encryption method, using an encryption key which is assigned to the machine tool and provided for the encryption, with the aid of a decryption key which is likewise assigned to the machine tool, is different from the encryption key and is provided for the decryption, and which module enables the machine control parameters for controlling the machine tool only in the case of successful decryption *(pars. 0173, 0525, 0534, and 1619; Figs. 7-9 and 11; the public/private key encryption/decryption circuit is used principally as an aspect of secure communications between an SPU 500 and VDE administrators, or other electronic appliances 600, that is between VDE secure subsystems)*;

wherein the improper-activation safety module determines the successful decryption of the machine control parameters after decryption also on the basis of finding a signature of a unit authorized for activating the machine tool *(pars. 1910, 1919, and 1958;*

upon initialization, the operational materials 3472 validate the embedded signature value against the actual electronic appliance 600 signature SIG, and may refuse to start if the comparison fails).

- **Regarding claim 2**, Ginter discloses the machine tool protected against improper activation according to Claim 1, wherein the machine tool has the reading module *(pars. 0476, 0462, and 0682-0686)*, which is intended for receiving a decryption module, which has the decryption key, with the aid of which the improper-activation safety module decodes the encoded machine control parameters, and the decryption module is set up in such a way that only the improper-activation safety module can read out the decryption key from the module *(pars. 0073, 0118-0121, 0169, 0225, and 0684; Figs. 9A-9B; encrypt/decrypt engine 522).*

- **Regarding claim 4**, Ginter discloses the machine tool protected against improper activation according to Claim 1, wherein the improper-activation safety module enables various functions of the machine tool for control by the machine control parameters in dependence on the decryption key originating from a plurality of decryption keys assigned to the machine tool *(pars. 0550, 0592, 0780, 1670, 1895, and 2476).*

- **Regarding claim 7**, Ginter discloses a method of avoiding improper machine activation by machine control parameters of a machine tool *(pars. 0439, 0502, 0699, 2535-2541; Figs. 7-9 and 11; SPUs 500 may be used to perform all secure processing for VDE 100)*, comprising:

assigning a private encryption key and a private decryption key to a sender of the machine control parameters using a computer system *(pars. 1637, 1639, 1644, 1692-1693, and 1714; users may each require their own public key/private key pair in order to obtain certificate; par. 1642; the 'public' values on which the certificates are based are kept secret)*, wherein the private encryption key is different from the private decryption key and is provided for the decoding *(pars. 1637, 1639, 1642, and 1644; i.e., public key vs. private key)*;

first encoding the machine control parameters intended for the machine tool using the computer system and the private decryption key *(pars. 1636-1639 and 1704; the generating PPE 650 may encrypt messages using its private key that, when decrypted successfully by other PPEs with the generating PPE's public key, permit the other PPEs to authenticate that the generating PPE sent the message)*;

providing the first encoded machine control parameters with a sender identification of a sender using the computer system *(pars. 1636-1644; by 'signing' both the public key generated by a PPE 650 and information about the PPE and/or the corresponding VDE electronic appliance 600 (e.g., site ID, user ID, expiration date, name, address, etc.), the VDE certifies that information about the PPE and/or the VDE electronic appliance is correct)*;

second encoding the provided machine control parameters using the computer system and an encryption key that is assigned to the machine tool *(pars. 1692-0693 and 1696-1712; the key(s) being installed are then transmitted inside the destination site's PPE*

650; the decryption process may use the site private key(s) 2816 to decrypt the transmission [i.e., the ciphertext was encrypted using the public/encryption key]);

first decoding the second encoded machine control parameters using the computer system and a decryption key that is assigned to the machine tool *(pars. 1636-1639 and 1696-1712; the generating PPE 650 may encrypt messages using its private key that, when decrypted successfully by other PPEs with the generating PPE's public key, permit the other PPEs to authenticate that the generating PPE sent the message)*, wherein the decryption key is different from the encryption key and is provided for the decoding *(pars. 1636-1639 and 1696-1712; public/private key pair)*;

authenticating a sender by the sender's identification and a suitability of the private encryption key assigned to the sender for the first decoded machine control parameters using the computer system *(par. 1644; VDE administrators, and other participants may normally require authentication of both the site (PPE 650) and of the user in a communication or other interaction; par. 1725; PPEs 650 to authenticate the identity of other PPEs and/or users; see also pars. 0119, 1377, 1381, 1401, and 2427)*; and, if so,

second decoding the first decoded machine control parameters using the computer system and the private encryption key *(pars. 1692-1693 and 1696-1712; the key(s) being installed are then transmitted inside the destination site's PPE 650; the decryption process may use the site private key(s) 2816 to decrypt the transmission)*.

- **Regarding claim 10**, claim 10 is similar in scope to claim 7, and is therefore rejected under similar rationale.

- **Regarding claim 11**, claim 11 is similar in scope to claim 7, and is therefore rejected under similar rationale.

- **Regarding claim 14**, Ginter discloses a computer readable medium for reading instructions into a machine tool, the machine tool being protected against improper activation *(pars. 0439, 0502, 0699, 2535-2541; Figs. 7-9 and 11; SPUs 500 may be used to perform all secure processing for VDE 100)*, and having an open-loop or closed-loop control device for the activation of machine functions, a reading module for reading in the instructions for the machine tool from the computer readable medium and machine control parameters for the open-loop or closed-loop control device from a data carrier or electronic carrier signal, *(pars. 0488-0495; Figs. 7-9 and 11; 'right operating system' 602, including SPU 500, VDE 604, and other operating system function 606, is used to control electronic appliance 600; the appliance 600 may be numerically controlled machines including machine tools and the like)* and an improper-activation safety module, which decodes the machine control parameters that are intended for the machine tool using an encryption key and a private decryption key assigned to the machine tool, wherein the encryption key and the private decryption key are stored in the instructions *(pars. 0173, 0525, 0534, and 1619; Figs. 7-9 and 11; the public/private key encryption/decryption circuit is used principally as an aspect of secure communications between an SPU 500 and VDE administrators, or other electronic appliances 600, that is between VDE secure subsystems)*;

wherein the machine control parameters for the machine tool are first encoded using a private encryption key assigned to a sender of the machine control parameters, and are provided with a sender identification of the sender, and, signed in this way, are only

encoded using the encryption key that is assigned to the machine tool and known for the encryption *(pars. 1637-1645; Figs. 64-67 and 67B-69; certificates are used to certify the origin of load modules 1100 and/or the authenticity of administrative operations; pars. 1637-0638; PPE signs [ie., PPE encrypts data using PPE private key] 'signing' both the public key generated by a PPE 650 and information about the PPE and/or the corresponding VDE electronic appliance 600 (e.g., site ID, user ID, expiration date, name, address, etc.); pars. 1636-1644; the generating PPE 650 may encrypt messages using its private key that, when decrypted successfully by other PPEs with the generating PPE's public key, permit the other PPEs to authenticate that the generating PPE sent the message)*;

so that, when the machine tool decodes the machine control parameters using the private decryption key, the machine tool authenticates a sender by the sender's identification and a suitability of an encryption key assigned to the sender's identification for the decryption of the machine control parameters intended for the machine tool *(pars. 1636-1644; Figs. 64-67 and 67B-69; the generating PPE 650 may encrypt messages using its private key that, when decrypted successfully by other PPEs with the generating PPE's public key, permit the other PPEs to authenticate that the generating PPE sent the message; a certificate may be needed to assure other users that a PPE is authentic, and to identify the PPE; further certificates may be needed for individual users of a PPE 650)*; and

wherein the data carrier or the electronic carrier signal controls the machine tool using the machine control parameters during reading-in or after reading-in after the

machine control parameters have been decoded *(pars. 1685-1871; Figs. 64-67 and 67B-69; the manufacturer possesses the public keys 2813, 2814 for validating load modules and initialization code downloads; see also pars. 1891-1895)*.

- **Regarding claim 26**, Ginter discloses a method of avoiding improper machine activation by machine control parameters of a machine tool according to Claim 7, further comprising:

checking whether the machine control parameters were actually generated for said machine tool using the computer system *(Ginter: pars. 1685-1690, 1868-1870, and 2016-2019; Fig. 69; wherein at least step 1400)*.

- **Regarding claim 27**, Ginter discloses a method of avoiding improper machine activation by machine control parameters of a machine tool according to Claim 26, further comprising:

determining whether a module associated with a sender which generated the machine control parameters is actually suitable and authorized to do so using the computer system *(Ginter: pars. 1685, 0173-0174, 1956-1958, and 2016-2019; Fig. 69K; wherein at least step 3564: 'machine signature match? Y/N')*.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luu Pham whose telephone number is 571-270-5002. The examiner can normally be reached on Monday through Friday, 7:30 AM - 5:00 PM (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Emmanuel L. Moise can be reached on 571-272-3865. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information

for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Luu Pham/
Examiner, Art Unit 2437

/Emmanuel L. Moise/
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